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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,472	09/28/2001	Stephane Martel	11759-US	2782

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EXAMINER

LATTIN, CHRISTOPHER W

ART UNIT PAPER NUMBER

2812

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,472

Applicant(s)

MARTEL ET AL.

Examiner

Christopher W Lattin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 20 is/are pending in the application.
- 4a) Of the above claim(s) 3,5,7,9,10,13,14 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2,4,6,8,11,12,15,17 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 4, 6, 11, 12, 15, 17 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "a different types of integrated circuit" in line 1 renders the claim indefinite because it is unclear if applicant intends to claim an integrated circuit different from those presently known or if the intention is merely to claim different known integrated circuits. Claim 1 is further rendered in definite by the limitation of forming "vias therethrough" in line 19. It is unclear if the vias are formed in the mask or in the substrate.

Claims 1, 2, 4, 6, 11, 12, 15, 17 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: removing the masks. Also, depending on the steps that are omitted, the numbered masking steps are inconsistent. For instance, if step 4 is omitted, the claimed method requires that a third and fifth mask be formed without direct reference to a fourth mask. This renders the claim indefinite because it is then unclear if a fourth step is inferred when step four is omitted or if some other masking step is to be inferred or even if no mask is to be formed between the formation of the third and fifth masks.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 6, 8, 11, 12, 15, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (U.S. Patent 5,541,125).

Williams et al. teach a process for making different types of devices in an integrated circuit, comprising: a) providing a substrate or epitaxial layer 42 of n-type material; and b) selecting a sequence of mask steps from a predefined set of mask steps selected from the group consisting of (1) applying a first mask and forming at least one P-well in said n-type material therethrough (see Figure 5A and B); (2) applying a second mask and forming an active region therethrough (see Figure 6A and B); (3) applying a third mask and forming a field region therethrough (see Figure 8A and B); (5) applying a fifth mask and carrying out a n-type implantation therethrough (see Figure 10A and B); (6) applying a sixth mask and forming polysilicon gate regions therethrough (see Figure 11A and B); (7) applying a seventh mask and forming a n-base region therethrough (see Figure 13A and B); (8) applying an eighth mask and forming a P-extended region therethrough (see Figure 14A and B); (10) applying a tenth mask and carrying out a P+ implant therethrough (see Figure 15A and B); (11) applying an eleventh mask and carrying out a N+ implant therethrough (see Figure 16A and B); (12) applying a twelfth mask and forming contacts therethrough (see e.g.

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Figures 20 and 31); (13) applying a thirteenth mask and depositing a metal layer therethrough (see e.g. Figures 20 and 31); (14) applying a fourteenth mask and forming vias therethrough (see e.g. Figures 20 and 31); (15) applying a fifteenth mask and depositing a metal layer therethrough (see e.g. Figures 20 and 31); wherein said sequence consists of at least said mask steps 1 to 3, 5, 6, and 10 to 16 and at least one of said mask steps 4, 7, 8, and 9 depending on the type of integrated circuit; and performing said selected sequence of mask steps in numerical order and teach that the p and n regions can be reversed, but fail to teach applying a sixteenth mask and forming a passivation layer therethrough. Official Notice is taken that it would have been obvious to one skilled in the art at the time of the invention to form a passivation layer to protect the devices.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Smayling (U.S. Patent 5,429,959) and Contiero et al. (U.S. Patent 6,022,778) teach methods of masking and forming similar to that presently claimed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Lattin whose telephone number is (703) 305-3017. The examiner can normally be reached Monday through Friday from 8:00 A.M. to 5:00 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling, can be reached at (703) 308-3325. The fax numbers for this Group are (703) 872-9318 for responses to non-final actions and (703) 872-9319 responses to final actions. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

CWL 
June 11, 2003


John F. Niebling
Supervisory Patent Examiner
Technology Center 2800